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INFLAMMATION AND ABSCESS OF THE BREAST

DURING LACTATION.

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IT is not from any special fitness that I invite attention to the subject under discussion, nor is it with the expectation of suggesting anything particularly original; but it is simply my desire to present a general review of the subject of the inflammatory diseases of the breast which occur during pregnancy and lactation, in order to attract notice to this much neglected organ and its ailments. In reading the average text-book on obstetrics and diseases of women, one will be surprised and dissatisfied with the brief article and general remarks upon the care and treatment of these affections, and yet it is a subject that is worthy of our profoundest thought, and should not be relegated to the domain of incompetent, meddlesome, or conceited nurses, or friends of the patient. Again, upon the healthfulness of the breast depends not only the

future health of the mother, but the health and life of her offspring. Too often are valuable lives sacrificed, or started on life's voyage in an unseaworthy vessel, that is certain to founder ere it is scarcely under way; simply because the breasts during pregnancy and lactation were improperly cared for, and as a consequence, the mother could not nurse her infant, but was obliged to resort to unnatural methods of feeding, which sooner or later resulted in evil consequences. In private practice among the better class, one does not have the difficulty which superstition or lack of intelligence in the poorer classes cause, in obstructing our well-intended efforts and advice; hence, inflammation or abscess of the breast is a much more frequent concomitant of pregnancy or lactation in the latter class, or dispensary patrons who have had no previous care, than in the former.

I must ask indulgence, therefore, if the importance of the subject discussed in this paper appears to be overdrawn, as my experience with these disorders has been considerable, though principally in dispensary practice, where these afflicted patients can be seen almost daily, suffering intensely from their inflamed breasts. It is not necessary to relate here the various cases seen or treated, for the history of each class or sub-division of these diseases is much the same; but such points as are considered of value, and which were gained by practical experience, in my own practice, or that of others, will be worked into this article.

Etiology.—The causes of inflammation of the breast may be considered under three heads, as follows: *first*, the mother; *second*, the child; *third*, miscellaneous.

I. As it is the stimulus of pregnancy which determines the evolution of the mammary gland with the development of its functional activity, we must consider this condition as one of the primary causes of inflammation of the breast; especially if the patient be a primipara, or if she has not gone to full time, but miscarried. Inflammation following an abortion, however, is so infrequent, that it need scarcely be mentioned as a cause.

II. As, "during the period of its fullest physiological bloom, *i. e.*, during lactation, variations in the degree of functional activity normally take place; moreover, as the same gland may

contain lobules which are comparatively at rest, and others, which are at the full height of activity," we must also consider this unequal vascular condition and exalted activity as an important factor in causing the disorders which we are now studying.

III. Previous inflammation of the breast from scarlatina or former lactation, or anything which may have produced general constitutional debility or disturbance; such as scrofulous or tubercular diseases, syphilis, malaria, marked anemia, puerperal fever, or septicemia, exposure to cold, emotional (?) influences, etc.

IV. Small or retracted nipples, whether due to natural or other causes, and erosions or fissures of the nipple. There can be no question but that erosions, ulcers, and fissures of the nipples, are very prominent, though indirect causes of mastitis. For in persons of untidy habits, or who are careless about washing the breast after nursing, these channels quickly convey septic material from their hands, the lochia, or other source, to the lymphatics of the mammary gland, and thus set up not only inflammation of the breast, but a general lymphadenitis, similar to that in other parts of the body.

The German, as well as the leading American authorities, consider this to be not only the most frequent, but the principal cause of mastitis; hence they urge the early use of antiseptics, to insure rapid healing. These ulcers and fissures are generally "caused by the constant oozing of an excessive flow of milk (galactorrhea), which causes a maceration of the epithelium upon the nipple," when it becomes loosened by the child's nursing very hard, or too frequently, and then small vesicles and erosions make their appearance, to be followed by fissures. These may be so small as hardly to be noticed at first; but they are to be suspected if the mother complains of much pain when the child takes the nipple.

V. The principal causes due to the child are, too frequent nursing, an unusually vigorous child with an excessive appetite, or late weaning. On the other hand, the too *in*frequent nursing by an indifferent mother may also be an exciting cause of mastitis, by not relieving the milk ducts at proper intervals.

VI. Another *possible* cause is, "if the child be suffering from

sprue, the transfer of the oïdium albicans imparts to the wound of the nipple an aphthous character," which may set up inflammation of the superficial fascia, or even extend to the gland itself.

VII. To my mind, one of the most active causes of inflammation or abscess of the breast, outside of maternal causes, is the frequent use of that *barbarous* instrument, the *breast pump*. It is just about as sensible to apply a dry cupping-glass to a boil, with the expectation of dispersing it, as it is to apply the ordinary large-mouth breast pump to a highly engorged and exceedingly painful breast, and then expect to get relief, and not add fuel to the fire of impending inflammation.

Playfair, in his excellent work on obstetrics, says, breast pumps and similar contrivances only irritate the breasts, and do more harm than good. However, there are some pumps so called which have but a small opening, somewhat similar to a "nipple shield," with a tube, mouth-piece, and milk receiver attached, to be used by the mother; these act more kindly and efficiently. The pumps in general use have very wide mouths which suck in a large portion of the breast and contract the tissues about the ducts, thus aggravating the trouble, with but little relief in lessening the quantity of milk in the breast. I recall here the exploits of my early boyhood, while living in the country. I often had to help milk the cows, and in order to save time, as well as fatigue, I would introduce a small straw in the one orifice of the cow's teat, when, forthwith, a rapid, easy flow of milk would take place. If it were not for the numerous small-sized orifices of the milk-ducts in the female nipple, small blunt-pointed gold or aluminium tubes or trocars, similar to a hypodermic needle, might, with care, be used in women with a similar effect.

VIII. Finally, *trauma*, whether from the bite of the teeth or the scratch of the child's finger nails, and injuries from whatever source, all add to the causes previously mentioned, in setting up inflammation about the mamma.

Classification.—Inflammation and abscess of the breast, as it occurs in nursing women, may be divided into three groups, according to the part affected, as the superficial or subcutaneous areolar tissue, the parenchyma of the breast, or in the deep fascia between the gland structure and the pectoral muscles, viz.:

I. *Epiglandular Inflammation*, or *Supramammary Abscess;*

II. *Parenchymatous Inflammation*, or *Mammary Abscess;* and

III. *Subglandular Inflammation*, or *Submammary Abscess.*

Although the inflammation generally affects these different parts, often the whole of the breast becomes involved, and no distinct implication of any special tissue can be made out. Still, it is desirable, when possible, to differentiate between them, in order that we may the more clearly read the symptoms of each, and thus employ intelligently the proper treatment, which varies somewhat for each locality. I have met with each variety of inflammation and abscess in the mammary region, and, in my own experience, as well as that of others, the supramammary is found to be the most frequent, and the parenchymatous the most serious, obstinate, and painful.

Symptoms.— The objective and subjective symptoms of these affections are very apparent, and yet, unless we have a clear understanding of them, it will be difficult, in some cases, to determine the point of origin, or principal location of the inflammation or abscess, until after free suppuration has set in. The first symptoms common to each variety are congestion or marked turgescence of the parts, with considerable tenderness and "dragging pain," appearing about the third day after confinement, or when the secretion of milk first commences. These may be followed by a slight rise of temperature, which, in the average patient, is about two degrees. If the parts be normal, and the child nurses properly, this slight disturbance may continue two or three days, then subside, and lactation go on without further difficulty. If such should not be the case, and there be any constitutional dyscrasia, the mammary tissues rapidly pass into an inflammatory state, to be followed, perhaps, by an abscess. The right breast is more frequently attacked than the left; but both glands may, under certain conditions, become affected, when all the symptoms are very much aggravated. When the inflammation continues, and suppuration supervenes, the patient suffers most intensely from pains and rigors, followed by a high fever and perspiration, which, in some instances, *has been taken for* an intercurrent attack of *malaria* or *remittent fever.* In the *periglandular* or subcutaneous variety, the symptoms are not so

severe, as a rule, and if the inflammation does not extend to the gland structure, suppuration soon occurs, the abscess breaks through the skin in a few days, and heals up in from one to three weeks, without, in most instances, preventing the process of lactation. It is this variety which mostly originates in a fissure or ulcer of the nipple, or areola, or one of its numerous sebaceous follicles, and gradually extends to the lymphatics, subcutaneous fascia, or lactiferous ducts. The *glandular* variety is always ushered in with a rigor, followed by sharp lancinating pains and great heat in the breast. If only a part of the gland be affected, circumscribed nodular enlargements can be felt throughout the mamma; but when the whole gland is affected, only a large irregular mass can be made out through the tense superficial structures. As the inflammation advances to suppuration, the secretion of milk is arrested in the affected lobules the tense, angry-looking skin assumes a dusky hue, becomes glazed, has a peculiar greasy appearance and doughy feel, and pits on pressure.

When pus has formed, the tension of the superficial parts, with edema, which is greatest in this variety, and deep-seated, but difficult fluctuation, determine its presence. When several foci of inflammation exist in separate lobules, they may suppurate in succession, so that abscess after abscess may develop, and the morbid condition be protracted for weeks, and even months.

When these break spontaneously, at points unfavorable for the discharge of pus, fistulous tracts are left, which take on "waxy degeneration," become chronic, and are very difficult to heal. As a result of this long-continued suppuration and necrosis of tissue, entire lobes may disappear, blood-vessels may become eroded, from which *fatal hemorrhage* has been known to occur, and, with the access of poisonous and retained air, septicemia may set in, from which death will often result. Finally, if a large milk duct be perforated, milk, mixed with pus, will escape, and if the abscess open externally, a milk fistula will occur which will be very difficult to heal before lactation ceases.

The *submammary* variety is very rare, and when inflammation occurs in this loose areolar tissue, it diffuses itself beneath the gland structure and invariably runs into an abscess with great

rapidity. "This rare condition owes its origin, according to Billroth, in most, if not in all cases, to abscess formation in the deep-lying glandular structures, the pus perforating the fasciæ beneath the gland." (Lusk.)

The pain is of a deep, heavy, throbbing character, which is increased by moving the arm or shoulder, as the inflammation extends to the axillary glands. The breast becomes prominent, is conical, and the whole organ is projected forward by the pressure from behind. It may or may not be readily movable upon the pectoral muscle.

Owing to the depth at which the pus forms, it is very difficult, in the early stages, to detect fluctuation, until it approaches the surface. The abscess at last points at the lower margin of the gland; but if suppuration has been profuse, the pus may extend to the circumference of the gland, or beyond. "Stoltz is said to have removed from such a sac twenty ounces of pus." (Lusk.)

Treatment.—The treatment of inflammation and abscess of the breast is both *preventive* and *curative*, and will be so considered in this article.

Preventive.—When we are engaged to attend a patient in confinement, our first act, after inquiring about her general health and bodily functions, should be to *examine* as to the *condition* of her *breasts* and *nipples.*

In a *primipara*, this should *never be omitted*, while in a multipara an examination is not so important, unless a history of difficulty during former pregnancies or lactation be given.

If the nipples are found to be diseased, small, or retracted, advice pertinent to the case should be given. During the last month of gestation, it is advisable to prescribe for daily use a mild alcoholic or astringent lotion for the purpose of hardening the tissues about the nipple, which in some persons may be very delicate and easily abraded.

Almost any astringent will answer for this, such as solutions of alum, tannin, lead, etc.; but I prefer for general use the glycerite of tannic acid, or tannin with spiritus myrciæ (bay rum), or eau de Cologne. A common household remedy, of a similar nature, is made from black or green tea and brandy. If the nipples are retracted or small, the patient must remove all pressure by clothing or corsets, and then, every night and

morning, anoint them with camphorated oil or vaseline, at the same time gently drawing the nipple out with the fingers. Country people often use for this purpose a "pair of small black bottle necks" which have been ground smooth on the under (or broken) side. One is placed over each nipple, and held in place by the clothing; these may be worn before or after the birth of the child, as desirable. After the birth of the child, we can apply it to the breast, with a fair prospect of increasing the length of the nipple; but if this fails, we can then try a bottle in which a partial vacuum has been made by means of hot water, or else one of the small nipple shields having a tube and milk receiver attached, and which is intended to be used by the mother.

As soon as the milk makes its appearance, we should *personally supervise the first attempt at nursing*, and give directions as to the importance of its regularity and frequency. It is well to have the mammæ supported by a well-fitting sling, especially if there be much engorgement and tenderness. This will aid greatly in preventing vascular congestion. If there be much congestion, soothing liniments, with gentle friction of the gland, from the base to the nipple, will help in relieving it.

The astringent lotions may still be continued, and particularly the alcoholic, for they are both cooling and antiseptic. All crusts or epithelial scales, which may obstruct the orifices of the milk-ducts, as well as dry or sour milk which may have remained upon the nipple after nursing, should be washed off (after each application of the child to the breast) with a warm solution of soda biborate or bicarbonate.

When the breasts become very full of milk, owing to the death of the child, or a weak infant, I have found a new clay pipe, with a long stem and smooth bowl, well oiled, a safe instrument to draw or start the milk, or even to empty the breast.

With it, or the tube and nipple shield already mentioned, the mother can draw her own milk much safer than with a "breast pump." As a last resort, we may substitute another baby, the patient's husband, nurse, or even a young puppy.

If for any reason it becomes necessary to arrest the secretion of milk, in part or wholly, remedies which appear to have a

specific action in this respect should be given, such as the internal administration of strong saline laxatives, potassium iodide, belladonna, ergot, etc. Potassium iodide is very highly extolled for this purpose. Externally, I have found the use of an ointment composed of ungt. belladonnæ and ungt. plumbi iodidi, equal parts, to be an excellent resolvent in arresting superfluous secretion or promoting the absorption of indurated lobules or glands.

Curative.—Presuming we have been called to see a case that has passed into the stage of inflammation, or that we have been unable to prevent suppuration in the one that we have attended from confinement, we may use or continue such treatment, already outlined, as appears suitable to the existing condition. In plethoric persons, general or local blood-letting may also be very useful in arresting the secretion of milk or stage of inflammation. Every obstetrician must be aware of the rapid failure of milk in a mother who has had "post-partum" or other hemorrhage, at or near her confinement.

In galactorrhea, unless irritation of the nipple or breast follow, we have an effective aid in diminishing the congestion. If there be but little milk, and the constant oozing causes fissures or ulcers, this should be stopped by giving ergot internally, and applying tinct. benzoin co. or collodion, over the nipple between the nursing periods. Ulcers and fissures of the nipple are apparently trivial affections; but when we witness the excruciating pain which the mother suffers while nursing her infant, and its accompanying worry and fever, and then recollect that they furnish the starting-point of most cases of mammary abscess, it behooves us to give them our closest attention.

As one great obstacle to the healing process is the nursing and biting of the child, the nipple should be protected during the act by one of the small shields invented for this purpose. Unfortunately, the child can rarely be induced to nurse properly through it, and then we must try the pipe or tube previously mentioned. If only one nipple be affected, and the quantity of milk not abundant, the child should be allowed to nurse upon the sound side only, for a period of twenty-four hours. When the infant is suffering from aphthæ, appropriate treatment should, of course, be given.

The ulcers or fissures about the nipple are to be touched

with a stick of silver nitrate which, in itself, is an excellent antiseptic, and then apply over it tinct. benzoin co. or collodion, or even salicylic or boracic acid in ungt. zinc. benzoat. If the fissures are so situated that antiseptic adhesive plaster can be applied, healing will take place more rapidly under its early use. When the *inflammation* gives evidence of being *severe* and prolonged, the child must be removed from the breast, and the *patient required to remain in bed until well over the acute stage.* With the patient in bed, the parts can be more thoroughly at rest and elevated, thus preventing much of the irritation and congestion. Poultices of *spongiopiline* and *hot water*, ground flaxseed and chamomile, or other favorite substances, must be applied *constantly*, taking care that the breast is not exposed or chilled while changing them. Camphorated oil applied underneath the poultice will prevent this to a certain extent.

If there be much local inflammation or pain in the integument, a solution of plumbi subacetatis, with or without opium, may be applied upon the surface of each poultice.

Equalized methodical compression, with moistened absorbent cotton, soft sponges, or circular *elastic* adhesive plaster, is also useful where poultices cannot be properly applied, in preventing the inflammation or causing absorption of the indurated tissues. Dr. W. G. Wylie advises the application of *fly-blisters* to the breast, and reports great success from their use in *aborting* mastitis. The foregoing measures, with internal antiphlogistic remedies, such as the salts of potash, or aconite, *quinine*, and *ferric chloride*, will in most cases *abort* or resolve the inflammation in a few days or a week.

Abscess.—If, after all, suppuration ensues, and an abscess forms, we then have to contend with the exhausted and agonizing condition of the patient, as well as her fears of the knife or lancet, and resolve in our minds the question, when and where to open the abscess. There exists among physicians a great difference of opinion about the propriety of opening a mammary abscess; some believing it to be the best practice to let the breast alone, and leave the operation to nature; while others advocate an *early operation*, as *soon* as *pus can certainly* be *detected.* I hold to the latter view, unless good reasons to the contrary exist, for by an early incision

we shorten greatly the stage of suffering and convalescence of our patient, besides preventing the burrowing and extension of the abscess, with its resulting and numerous fistulæ. In dispensary practice the truth of this statement can be quickly proven. These patients are mostly attended by filthy, so-called midwives, who neglect the breasts; in consequence of which, inflammation sets in, an abscess forms, poultices, if applied, are very irregularly put on, and the patient, through fear of the surgeon's knife, fails to seek advice until the whole breast has become involved, and is one mass of sinuses or fistulæ.

These patients complete the picture of woe and suffering, for they are broken in health, from loss of sleep and appetite, and owing to the long-continued suppuration have become very much emaciated, suffer from rigors, hectic, alternation of heat and cold, and have a high temperature ranging from 100 to 104° F.

If these patients could have been seen early, the abscess might have been prevented; or even if it had formed, prompt incision would have relieved the patient from pain and constitutional disturbance, prevented the abscess from enlarging, limited suppuration and the destruction of glandular tissue, and finally, secured coaptation and rest to the internal surface of the abscess, so that healing would have taken place much more speedily. When there is a prospect of the inflamed breast resulting in an abscess, no mention of the knife or lance should be made until it is "ripe," when without further delay the abscess should be opened at once. If we do otherwise, we needlessly excite the fear of our patient, and often lose a good paying one, who will suffer much, and seek the services of one who "does not believe in using the knife," but trusts all to nature regardless of cost. In opening an abscess, it is of but little use to attempt to allay the sensitiveness of the skin by the use of pure carbolic acid or the ether spray; but rather take a small, narrow, straight or curved bistoury, and make a perpendicular thrust or incision, radiating from the nipple, at the point where fluctuation is most distinct, or at the most dependent part of the abscess.

The lowest part of the abscess necessarily depends on the position of the patient; whether the patient is to remain in a

recumbent posture, or to walk about, and this must be considered before making the outlet for drainage. The operation can be done so quickly that the patient is scarcely aware of the cut ere it is done, and she will not experience one fraction of the pain she suffers each hour before it is opened. After incising, the pus should be let out freely, so as to allow the walls of the abscess to collapse, but it should not be forced out by squeezing the sac.

As a rule, granulating surfaces do not absorb, consequently, if the breast has been washed off with a solution of carbolic acid before incising, and the wound kept *absolutely clean*, there need be no fear of any septic condition arising. Fine marine oakum may be used to keep the incision or fistulæ open, in place of drainage tubes, which often cause irritation and renewed inflammation. After the breast has been again washed with a solution of thymol (℥ i.–O.i.), absorbent cotton or fine oakum should be placed over the mouth of the abscess to catch the subsequent discharges, and a roller bandage carefully applied. If the abscess is large and discharges freely, the dressing should be changed night and morning, and *not allowed* to remain long enough *to become septic*. By these means, the breast will be equally compressed, the walls of the sac brought together, and the pus prevented from decomposing, conditions which conduce to rapid recovery. To those who prefer to follow Lister's directions for opening these abscesses, I would refer to Playfair's Obstetrics, Amer. ed., pp. 562, 563; or the last Amer. ed. of Holmes' Surgery. In old cases which come to us with the whole organ diseased and full of sinuses and fistulæ, undergoing *waxy degeneration*, and discharging an irritant acid pus, the treatment must differ considerably. In the first place, we must *cease all poulticing*, unless the inflammation lights up again, for constant poulticing soddens the integument and glandular tissues, and greatly retards the process of healthy granulation and repair. Any remaining abscess, or pocket, which has not thorough drainage, must be carefully incised. If this should be in a deep glandular or vascular part, and there be fear of injuring the blood-vessels or lacteal duct, Hilton's method of opening an abscess may be pursued, as follows: A careful incision is made with a scalpel through the integument and fascia, so as to ex-

pose the tissues under which the pus lies; a director is then pushed through the substance of the muscle or other tissue, into the cavity of the abscess, and along the groove of this guide, a slender dressing-forceps is pushed; when it reaches the abscess, the blades are opened wide, the tissues separated, and free exit given to the pus. In this way hemorrhage is not likely to occur; but in old sinuses, ulceration or sloughing of the coats of a vein or artery may occur, from which serious or fatal spontaneous hemorrhage is likely to result.

This is more liable to occur in cases of long standing in patients suffering from struma or cachexia. I recollect seeing a syphilitic patient recently, with mammary abscess, in whom hemorrhage set in so seriously that she would certainly have died, had not medical aid been at hand. Simple cases should be treated by injections of hot water, tincture of iodine, pressure, etc. If the hemorrhage be serious, the sac or sinus should be laid open and the artery ligated as usual. There is nothing so discouraging to patient or physician as these recurring abscesses, and old sinuses which refuse to heal up; and unless we can destroy their waxy or edematous granulations, or "limiting" pyogenic membrane, we must expect but little success or credit. Liquid caustics must of course be used, unless each sac or sinus be laid open, and for this purpose tincture of iodine, or solutions of silver nitrate, zinc chloride, etc., are effective agents. It is not advisable in sub- or glandular abscesses, to lay them open, and here, careful graduated compression will assist our stimulating injections. In hospital and dispensary practice, I have seen these waxy granulations or pyogenic membranes resist all treatment, under the most skilful surgeon's hands, until "*Villate's solution* (see Bartholow's Mat. Med., or Dunglison's Med. Dict'y), or "*Labarraque's Solution*" was used. I have used these, more especially, in sinuses extending from a necrosed hip-joint to the pelvic cavity or thigh, and also in old mammary abscesses of several months' standing, with immediate and almost magical results. In fact, my enthusiasm is so great in behalf of these two solutions for these old sinuses, that it has been my main incentive in bringing the subject of abscess of the breast to your attention. Villate's solution, and that only, saved the life of a young boy, at the Presbyterian Hospital,

upon whom excision of the hip-joint had been performed with a good result, except that the acetabulum became involved, and then extensive burrowing sinuses, with waxy granulations set in, which nothing but this solution could destroy. Dr. C. K. Briddon, New York, can testify as to its efficacy in this and other cases. Villate's solution, however, is painful, and must be diluted to about one part in two of water. Labarraque's solution (French prep'n) has been equally effective in my hands in *mammary abscess*, used about one part in eight or ten of water, with the syringe twice or three times a day. This has the advantage of not causing pain or soiling the clothing. *It is the most active stimulant* of chronic *ulcers* or *sinuses* that I have ever seen, and one has only to try it in order to believe. It was under Prof. A. C. Post's service at the Presbyterian Hospital that I first became aware of its great healing powers. Stillé's National, and the U. S. Dispensatory, also extol its virtues highly. In destroying these disease-breeding sinuses, and rapidly healing them, we remove much of the *danger* of *subsequent malignant mammary growths*, which *undoubtedly have their origin*, in most instances, in the *irritation* set up by the *inflammatory diseases* of the breast (see S. W. Gross on "Tumors of the Breast").

As the drain on the system is great, and the constitutional debility generally pronounced, much attention must be paid to general treatment; and abundance of nourishing food and appropriate stimulants given.

Of remedial measures, *quinine*, *iron*, nux vomica, *mineral acids*, and *cod-liver oil* are appropriate and useful. I have found the following mixture an excellent tonic and preventive of excessive suppuration in these cases: ℞ Strychniæ sulph., gr. ss.; Tr. ferri chloridi, f. ʒ iiss.; Acid. phosphor. dilut., f. ℥ ij.; Aquæ, q. s. ad f. ℥ iv. M. Signa: One teaspoonful in a wineglass of water after meals.

In conclusion, it is not to be supposed that the treatment outlined in this paper is to be carried out entire in ordinary cases of lactation, or that this paper will boldly defy the imputation that "there is nothing new in it;" but in answer, it is simply necessary to say, that abnormal cases of lactation only are referred to, and that our success in practice depends not so much upon new theories, as it does upon the thorough

and intelligent application of the surgical skill, and well-known remedies, which we now possess.